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METHODS OF ERADICATING ANTHRAX

- USSR -

by A. S. Korotich, I. D. Netreboko and V. M. Suponitskaya

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FOREWORD

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METHODS OF ERADICATING ANTHRAX

- USSR -

/Following is a translation of an article by A. S. Korotich, I. D. Netrebko and V. M. Suponitskaya (Kiev Institute of Epidemiological and Microbiological Research) from the Russian-language journal Vrachebnaya delo (Medical Practice), Kiev, Vol. XLII, No. 12, December 1959, pages 1303-1304./

Anthrax is one of the oldest infectious diseases. Despite a comparatively thorough study of the disease it is still being recorded in all the countries of the world.

Data from the literature on the occurrence of anthrax and information on its epizootological and epidemiological aspects are still extremely limited. With regard to the Ukrainian SSR such material is completely lacking.

We have made an analysis of available statistical, epizootological and epidemiological data and have tried to trace the dynamics of the disease in man and farm animals in the Republic during the course of 13 years (1946-1958). The reduction in the incidence of anthrax among people corresponds to a reduction in the corresponding incidence in animals:

TABLE 1

Reduction in the incidence of anthrax in man and farm animals (in %)

| <u>Years</u> | <u>Man</u> | <u>Cattle</u> | <u>Sheep and goats</u> |
|--------------|------------|---------------|------------------------|
| 1954 | 100 | 100 | 100 |
| 1956 | -44 | -45 | -60 |
| 1958 | -58 | -59 | -88 |

In confirmation of these general data we should indicate that in provinces where a rather high incidence of anthrax in animals has been recorded (Vinnitsa, Odessa, Zaporozh'ye, Khar'kov, Dnepropetrovsk), more frequent cases of infection and illness have been observed in man. Indexes of intensity are higher here, for example, than in Lvov, Rovno, Stanislav Provinces

which have a better anthrax record for livestock.

Thanks to veterinary hygiene measures which are being carried out, the incidence of anthrax in livestock is slight as compared with other infectious disease, but even with a slight occurrence there are relatively frequent cases of persons being infected from animals. For instance, an analysis of data on the cases of human infection in the Ukrainian SSR during the 13-year period indicates that there was one human case for each 7.5 cases of anthrax in animals. These figures are incomparably higher than in the case of other zoonoses (bovine collosis, rabies, foot-and-mouth disease).

Such frequent cases of infection of persons from sick animals indicates an unsatisfactory situation in carrying out prophylactic measures and sanitary regulations.

A mass natural reservoir for anthrax infection are the so-called stationary foci of infection. In these foci there must be preventive inoculation against anthrax for all susceptible livestock. As experience has shown, where animals are 100% immune to the disease, there are no cases recorded among people. Increasing the number of immune animals leads to a marked reduction in the incidence; in the same way the reduction in the number of vaccinated animals shows up in an increase in the incidence of infection. In Khmel'nitskiy Province, for instance, a reduction in the active immunization of cattle in 1956 caused a 4.6-fold increase in the incidence of the disease. This very important factor must be constantly taken into consideration in the organization of measures to control anthrax.

At present an enormous amount of work is being done in the Ukraine towards immunizing livestock against anthrax. However there are still cases where all the cattle in an infected area are not vaccinated. Observations have shown that man is largely infected from animals in cases where it has been necessary to slaughter sick animals and process and butcher the carcass. Most important measures in prevention are providing 100% immunity among livestock, and acting upon all three variable factors in the epidemic process -- the source of infection, the mechanism of transmission and the susceptible population.

Each case of forced livestock slaughter should put us on the alert and arouse suspicion of anthrax; before visual and laboratory examination by a veterinarian all handling of the carcass should be categorically prohibited.

Control over carrying out preventive inoculation in all areas with a poor anthrax record must be improved with prompt revaccination and booster shots for all animals entering the area. The sanitary and epidemiological control service is under obligation to take measures to protect the soil and natural waters from contamination by the anthrax pathogen. It is

especially important to adhere strictly to sanitary regulations in disposing of animal carcasses. Unfortunately this most important aspect of veterinary hygiene has been extremely neglected.

Serious attention must be given to preventing infection from hides and wool. Epidemiologists are under obligation to make systematic checks on the operation of leather establishments to see that they are meeting sanitary requirements. Raw leather must be most carefully examined for possible anthrax infectiousness by making Ascoli precipitation tests.

Sanitary and epidemiological control agencies must step up their work in spot checking and immunizing the public on the basis of what they find. There must be a decided improvement in the diagnosis of anthrax in man. As shown by an analysis of available data, the overwhelming majority of cases in man have not been confirmed by bacteriological examination and the diagnosis has been based on clinical and epidemiological or simply clinical data.

If the measures indicated are carried out with an expanded program of public health education, it will doubtless lead to a reduction and even a total elimination of anthrax cases in man.

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